Chapter 8.6
The Agile and Virtual University

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INTRODUCTION

The convergence of information technology developments, together with instructional and pedagogical developments, is creating opportunities for new paradigms of learning and teaching. New concepts of postgraduated university education and of university continuing education will emerge, where new roles for individuals and institutions will be available and where new requirements will shrink.

The advanced information and communication technologies, together with several applications, offer new perspectives such as the so-called *virtual university*. Simultaneously, to gain market share, several organizational arrangements are emerging in the virtual university field like consortia arrangements and joint venture initiatives between and among institutions and organizations. The dynamically changing social and economical environment where we live aims for new approaches to virtual and flexible university continuing and postgraduated education such as the concept of *Agile/Virtual University* (A/VU) proposed by the authors in this article. However, the implementation of this concept (and of other similar concepts) requires, besides the information and communication infrastructure, the value added provided by higher level functions to support *flexible* and *individualized learning projects*. The implementation of the *Agile/Virtual University* concept requires a framework and a specific supporting environment such as the market of teaching resources.

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In this contribution, the Agile/Virtual University concept is introduced as an integrated set of providers of units of learning, that is, integrated to respond to an individualized need. The product provided by the A/VU is an *individualized learning project* (a continuing training/education course). These providers can be universities, university teachers, and individuals (independent teachers), organized and managed by either a higher-education enterprise or a university itself, in a specific environment proposed by the authors as a *market of teaching resources* and also herein presented.

BACKGROUND AND MAIN CONCEPTS

Web-based distance education seems to be a contribution towards the democratization of learning access, in particular in the domain we are concerned with—the university continuing education and postgraduated education in the format of an Agile/Virtual University. However, the new approaches to learning, such as flexible and distance learning, have not yet reached the required stage of maturity and although some of these concepts have existed for several years, there is not yet a clear understanding of the way these approaches will evolve and become useful and common practices.

Another concern is that systems conceived to provide integrated standard off-the-shelf learning solutions are less efficient when compared with dedicated systems. Providers of units of learning, primitive or complex, can be integrated in completely individualized or customized flexible Web-based networked learning projects, which in turn can be agilely and dynamically adjusted to either the performance of the providers or to the learner evolution or changing requirements. This corresponds to a new structure of learning, that is, a different learning project for each individual (learner) while, at the same time, each provider (teacher) can specialize in focused units of learning and get economies of scope by providing with high quality the same units in several different learning projects. This concept requires an environment to cope with several concerns such as assessment, accreditation, quality assurance, trust, and the market of teaching resources, and must be mediated by a broker (Cunha & Putnik, in press).

THE E-LEARNING OBJECTS CONCEPT

Several different definitions of *e-learning objects* can be found in the literature, and other terms are used seemingly interchangeably in place of *e-learning objects*. In this article, Wiley's (2000) definition is adopted: a learning object is a "reusable digital resource to support technology-supported learning" (Wiley, 2000).

The Virtual University Concept: State of the Art

According to a Commonwealth of Learning evaluation report on virtual education (Farrell, 1999), the label virtual is widely and indiscriminately used, and it is frequently used interchangeably with other labels such as open and distance learning, distributed learning, networked learning, Web-based learning, and computer learning.

To gain market share in the lifelong learning market, several organizational arrangements are emerging in university virtual learning and are the result of partnerships between institutions or businesses and institutions, joint venture initiatives between and among institutions and organizations, consortia arrangements, and so forth, that can be found in, for instance, Dirr (2001), Farrell (1999), and American Federation of Teachers (2001). Simultaneously, complementary institutions that do not provide instruction directly emerge in the virtual university field; examples include institutions authorized to provide services as quality assurance, award credentials, learning assessment,